



SL15

**with User-Adjustable Flash Settings
1-2nm+ Solar Marine Light
Installation & Service Manual**

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with User-Adjustable Flash Settings

1-2nm+ Solar Marine Light

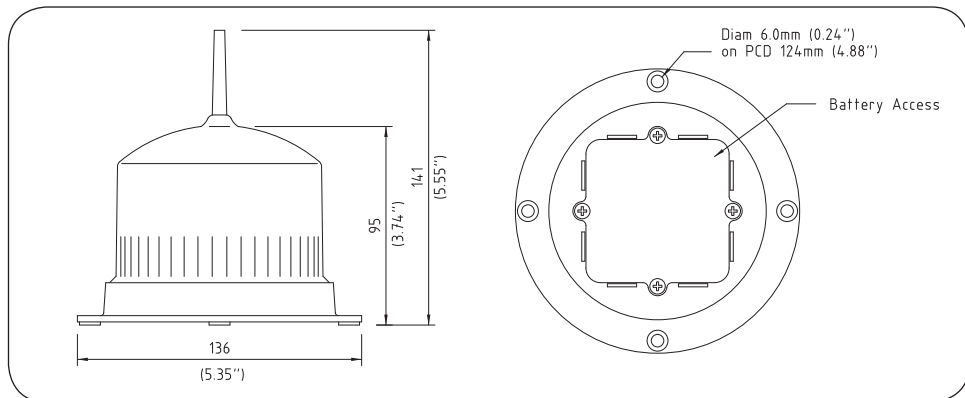
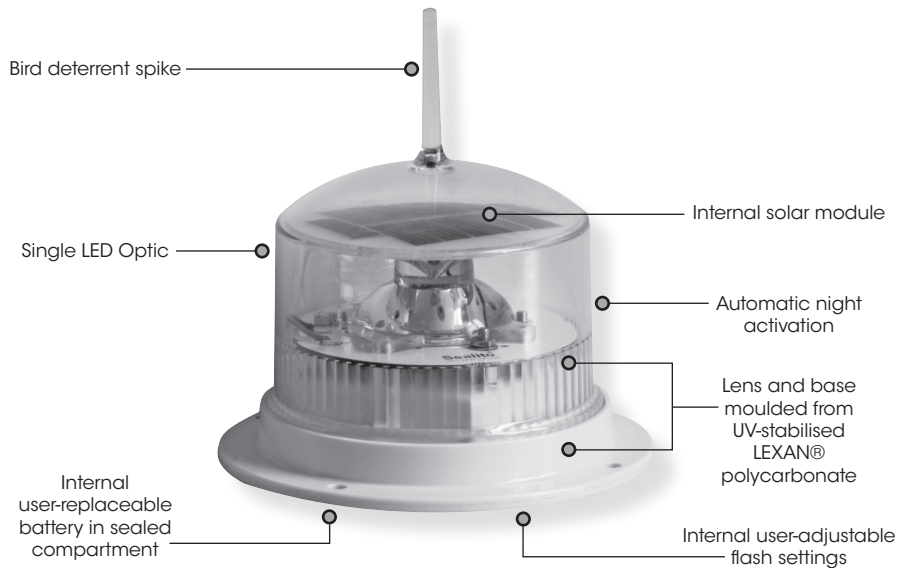


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Version No.	Description	Date	Approved
1.0	Manual re-launch	June 2009	K. Paton
2.0	Flash Adjustment	July 2009	K. Paton
2.1	Logo Update	May 2010	K. Paton
2.2	Warranty Update	July 2010	K. Paton
3.0	Update: New Design	Sept 2011	J. Dore
3.1	General update	June 2012	J. Dore



Introduction

Congratulations! By choosing to purchase a Sealite lantern you have become the owner of one of the most advanced LED marine lanterns in the world.

Sealite Pty Ltd has been manufacturing lanterns for over 25 years, and particular care has been taken to ensure your lantern gives years of service.

As a commitment to producing the highest quality products for our customers, Sealite has been independently certified as complying with the requirements of ISO9001:2008 quality management system.

Sealite lanterns comply with requirements of the US Coast Guard in 33 CFR part 66 for Private Aids To Navigation.

By taking a few moments to browse through this booklet, you will become familiar with the versatility of your lantern, and be able to maximise its operating function.

Please remember to complete the Sealite warranty registration card accompanying your lantern.

Operating Principle

The solar module of the lantern converts sunlight to an electrical current that is used to charge the battery. The battery provides power to operate the lantern at night.

The flasher unit has very low current requirements. A microprocessor drives an ultra bright LED through a DC/DC converter, which enables the LED's to operate within the manufacturer's specifications. The battery is protected from over-charging within the circuit to ensure maximum battery life.

On darkness, the microprocessor will initiate a program check and after approximately 1 minute begin flashing to the set code

Technology

Sealite is the world's fastest growing manufacturer of marine aids to navigation. We employ leading mechanical, optical, hardware & software engineers to create innovative products to service the needs of our customers worldwide, and offer the widest range of solar-powered LED lanterns in the marketplace.

Electronics

Sealite employs leading in-house electronic engineers in the design and development of software and related circuitry. All individual electronic components are sourced directly by Sealite procurement staff ensuring that only the highest quality components are used in our products.

LED Technology

All marine lanterns use the latest advancements in LED (Light Emitting Diode) technology as a light source. The major advantage of LED's over traditional light sources is well established in that they typically have an operational life in excess of 100,000 hours, resulting in substantial savings to maintenance and servicing costs.

Precision Construction

Commitment to investing in the design and construction of injection-moulded parts including optic lenses, light bases and a range of other components ensures that all Sealite products are of a consistent & superior quality.

Optical Performance

Sealite manufactures a range of marine LED lenses moulded from multi-cavity dies. Complex shapes such as the SL70, BargeSafe™ and 16-segment multi-focus lenses are a testament to the company's superior in-house lens manufacturing capabilities and outstanding optical performance.

Award-winning, Patented Technology

Several United States and Australian patent registrations are held on Sealite's range of innovative designs, with other regional patents pending in Canada, United Kingdom and Europe.

SL15 Model

The Sealite SL15 1-2nm+ LED compact light incorporates some of the most advanced technology available. Made from tough, durable polycarbonate and using the latest high-intensity LEDs, no expense has been spared in the design and development of this lantern. Installation takes just minutes, and a permanent ON/OFF, accessible through the battery compartment, switch allows for easy storage. The SL15 is designed to be maintenance-free and have a service life of over 3 years.

SPECIFICATIONS •

Light Characteristics

Light Source	1 LED
Available Colours	Red, Green, White, Yellow, Blue
Maximum Available Intensity (cd)†	Red - 6.2 Green - 7.6 White - 6.8 Yellow - 5.9
Visible Range (nm)	1-2+
Horizontal Output (degrees)	360
Vertical Divergence (degrees)	7
Reflector Type	Single LED Optic
Available Flash Characteristics	16 user-adjustable IALA flash characteristics (other flash patterns available on request)
Intensity Adjustments	32 automatic step-down settings based on power demand of flash code selection
LED Life Expectancy (hours)	>100,000

Electrical Characteristics

Current Draw (mA)	Refer to Sealite Power Calculator
Circuit Protection	Integrated
Nominal Voltage (v)	3.6
Autonomy (days)	>50 (14 hour darkness, 12.5% duty cycle)
Temperature Range	-40 to 80°C

Solar Characteristics

Solar Module Type	Multicrystalline
Output (watts)	0.45
Solar Module Efficiency (%)	14
Charging Regulation	Microprocessor controlled

Power Supply

Battery Type	High grade NIMH - Environmentally friendly
Battery Capacity (Ah)	1.6
Nominal Voltage (v)	3.6
Battery Service Life	Average 5 years

Physical Characteristics

Body Material	LEXAN® Polycarbonate - UV-stabilised
Lens Material	LEXAN® Polycarbonate - UV-stabilised
Lens Diameter (mm/inches)	98 / 3 7/8
Lens Design	Single LED Optic
Mounting	4 x 6mm mounting holes
Height (mm/inches)	141 / 5 1/2
Width (mm/inches)	136 / 5 3/8
Mass (kg/lbs)	0.5 / 1 1/8
Product Life Expectancy	Up to 12 years

Certifications

CE	EN61000-6-3:1997. EN61000-6-1:1997
Quality Assurance	ISO9001:2008
Waterproof	IP68

Intellectual Property

Patents	US Pat. No. 6,667,582. AU Pat. No. 778,918
Trademarks	SEALITE® is a registered trademark of Sealite Pty Ltd
Warranty *	3 years

Options Available

- ON/OFF switch
- Custom flash patterns
- 50mm pole mount adapter plate

• Specifications subject to change or variation without notice
* Subject to standard terms and conditions
† Intensity setting subject to solar availability



Installation

Charging the Battery

New lanterns should be left in the sun for 1-2 days to ensure battery is charged before placing in service. Please note, lantern will re-charge even when switch is turned to 'OFF' position.

Preferred Installation Location

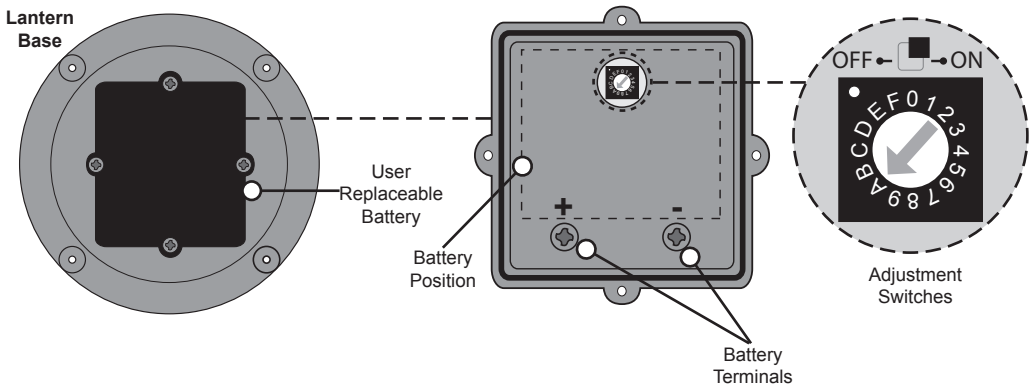
For best lantern performance, ensure solar modules are not covered and are in clear view of the sky with no shadows.

1. The SL15 will be supplied preset to the requested flash code.
2. The light can be directly positioned in your desired location. Secure it, utilising the 4 x holes in the flange. Ensure the light is bolted to an even, flat surface.

Flash Codes

Adjusting the Flash Code

1. Remove the 4 x battery cover screws and lift the cover and battery out of the compartment to expose the adjustment plug.
2. Unscrew the adjustment plug.
3. Using a small flat bladed screwdriver adjust the Flash Code to the desired setting.
4. Cover the light, in darkness, for at least 30 seconds to activate the light sensor. Make sure the light is flashing correctly.
5. Uncover the light and wait at least 30 seconds to make sure the light turns off in daylight.
6. Insert the adjustment plug and replace the battery.
7. Replace the cover and secure using the 4 x screws. Do Not over tighten screws.
8. Position the light in your desired location and secure, utilising the 4 x holes in the flange. Ensure the light is bolted to an even, flat surface.



Selecting an Intensity/Power Setting

Using the latest technology in software, the SL15 automatically adjusts the Intensity Setting when Flash Code is set.

Selecting a Flash Code- Rotary Switch

All SL15 Lights are fitted with a rotary switch. Turning the small arrow to the appropriate number or letter will set the code (see '*Flash Codes*' section of this manual). The unit may take up to one minute to activate a new flash code. A comprehensive list of available flash codes is listed in the '*Flash Code Table*' section of this manual.

Rotary
Switch



Flash Code Table

SWITCH POSITION	FLASH SETTING		DUTY CYCLE
	ON (sec)	OFF (sec)	
0	Steady On		100%
1	0.5	1.0	33%
2	0.5	3.5	12.5%
3	1.0	3.0	25%
4	0.5	5.5	8.5%
5	0.3	0.7	30%
6	0.3 (On), 0.7 (Off), 0.3, 0.7, 0.3, 0.7, 0.3, 15.7		6.5%
7	0.3	1.7	15%
8	0.3	2.2	12%
9	0.5	2.0	20%
A	0.3	2.7	10%
B	0.5	2.5	16.5%
C	0.7	2.3	23.5%
D	0.5	4.5	10%
E	1.0	4.0	20%
F	Custom Flash Code Position		

Note: If a Specific Flash Code has to be pre-set at the factory it will be found at Switch Position F



Maintenance and Servicing

Designed to be maintenance free, the SL15 requires minimal attention, though the following maintenance and servicing information is provided to help ensure the life of your Sealite product.

1. **Cleaning Solar Panels** - occasional cleaning of the solar panels may be required. Using a cloth and warm soapy water, wipe off any foreign matter before rinsing the panels with fresh water.
2. **Battery Check** - inspection of batteries should be performed every two years (minimum) to ensure that the charger, battery and ancillary electronics are functioning correctly. Using a voltage meter, check that the battery voltage is at least 3.6 volts under 50mA load, and ensure all terminals are clear of foreign matter.

Replacing the battery

The SL15 lantern is the only compact marine lantern with a double sealed battery compartment. This provides the user with the ability to change the battery after years of operation.

1. Unscrew the 4 x Battery Cover screws.
2. Remove battery and unscrew positive and negative leads.
3. Discard old battery in a safe manner.
4. Reattach positive and negative leads to new battery and then place back into case.
5. Secure battery cover and switch lantern 'ON' via internal switch.
6. To test place dark cover (towel or jacket) on top of light to activate sensor, light will come on within one minute.
7. Remove the 4 x battery cover screws and lift the cover and battery out of the compartment to expose the adjustment plug.
8. Unscrew the adjustment plug.
9. Use a small flat bladed screwdriver to turn unit OFF.
10. Unscrew positive and negative battery leads.
11. Discard old battery in a safe manner. Please remember to recycle where possible.
12. Cover the light, in darkness, for at least 30 seconds to activate the light sensor. Make sure the light is flashing correctly.
13. Uncover the light and wait at least 30 seconds to make sure the light turns off in daylight.
14. Insert the adjustment plug and replace the battery.
15. Replace the cover and secure using the 4 x screws.

Care must be taken to observe the polarity of the battery before the leads are re-connected, and ensure the replacement battery is correctly fitted. Always discard old batteries in a safe manner.

Long Term Storage Instructions (>4 weeks)

If light is required to be stored for longer than 4 weeks, please turn the light off using the internal ON/OFF switch (or external ON/OFF switch where fitted).

1. Remove the 4 x battery cover screws and lift the cover and battery out of the compartment to expose the adjustment plug.
2. Unscrew the adjustment plug.
3. Using a small flat bladed screwdriver switch the ON/OFF switch to the OFF position.
4. Insert the adjustment plug and replace the battery.
5. Replace the cover and secure using the 4 x screws. Do Not over tighten screws.
6. Repeat these steps to re-activate your light when it is removed from storage.

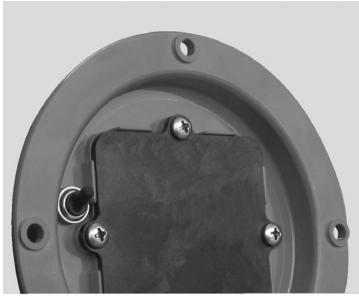
Trouble Shooting

Problem	Remedy
Lantern will not activate.	<ul style="list-style-type: none"> • Ensure internal switch (or external switch where fitted) is set to the 'ON' position. • Ensure lantern is in darkness. • Wait at least 45 seconds for the program to initialise in darkness. • Ensure switch setting is on a valid code (See <i>Flash Codes</i> section of this manual). • Ensure battery terminals are properly connected. • Ensure battery voltage is above 3.6 volts.
Timing codes will not change.	<ul style="list-style-type: none"> • Turn rotary switch several times to ensure contacts are clear.
Lantern will not operate for the entire night.	<ul style="list-style-type: none"> • Expose lantern to direct sunlight and monitor operation for several days. Sealite products typically require 1.5 hours of direct sunlight per day to retain full autonomy. From a discharged state, the lantern may require several days of operational conditions to 'cycle' up to full autonomy. • Ensure solar module is clean and not covered by shading during the day.

SL15 Optional Configurations

ON/OFF Switch (SL15-SW)

An optional external ON/OFF switch can be installed on request (additional charges will apply).



Custom Flash Patterns

Other flash patterns are available on request.

SL15 Accessories



MC/02

Post mounting plate to suit standard base SL15
50mm ID



MC/04

Post mounting stand
50mm OD post, 3-hole 200mm OD base pattern



MC/05

90 degree wall mounting stand
50mm OD



MC/09

Buoy mounting plate to affix SL15 lantern to SLB600, SLB610 &
SLB700 buoys



Notes



Notes



Sealite LED Light Warranty V2.1

Activating the Warranty

Upon purchase, the Sealite Pty Ltd warranty must be activated for recognition of future claims. To do this you have two (2) options:

1. **Postal Registration** - please complete the Sealite Warranty Registration Card and return to Sealite within 30 days of your purchase.
2. **Online Registration** - please complete the Online Registration Form at; www.sealite.com

Sealite Pty Ltd will repair or replace your LED light in the event of electronic failure for a period of up to three years from the date of purchase.

The unit must be returned to Sealite freight prepaid.

Warranty Terms

1. Sealite Pty Ltd warrants that any Sealite marine products fitted with telemetry equipment including but not limited to AIS, GSM, GPS or RF ("Telemetry Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of twelve (12) months from the date of purchase by the original purchaser.
2. Sealite Pty Ltd warrants that any BargeSafe™ Series of LED barge light products ("BargeSafe™ Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of twelve (12) months from the date of purchase by the original purchaser.
3. Sealite Pty Ltd warrants that any LED area lighting products ("Area Lighting Products") but not including sign lighting products will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of twelve (12) months from the date of purchase by the original purchaser.
4. Sealite Pty Ltd warrants that any LED sign lighting products ("Sign Lighting Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of three (3) years from the date of purchase by the original purchaser.
5. Sealite Pty Ltd warrants that any Sealite marine lighting products other than the Telemetry Products, BargeSafe™ Products, and Area Lighting Products ("Sealite Products") will be free from defective materials and workmanship under normal and intended use, subject to the conditions hereinafter set forth, for a period of three (3) years from the date of purchase by the original purchaser.
6. Sealite Pty Ltd will repair or replace, at Sealite's sole discretion, any Telemetry Products, BargeSafe™ Products, Area Lighting Products or Sealite Products found to be defective in material and workmanship in the relevant warranty period so long as the Warranty Conditions (set out below) are satisfied.
7. If any Telemetry Products, BargeSafe™ Products, Area Lighting Products or Sealite Products are fitted with a rechargeable battery, Sealite Pty Ltd warrants the battery will be free from defect for a period of one (1) year when used within original manufacturer's specifications and instructions.

Warranty Conditions

This Warranty is subject to the following conditions and limitations;

1. The warranty is applicable to lanterns manufactured from 1/1/2009.
2. The warranty is void and inapplicable if:
 - a. the product has been used or handled other than in accordance with the instructions in the owner's manual and any other information or instructions provided to the customer by Sealite;
 - b. the product has been deliberately abused, or misused, damaged by accident or neglect or in being transported; or
 - c. the defect is due to the product being repaired or tampered with by anyone other than Sealite or authorised Sealite repair personnel.



3. The customer must give Sealite Pty Ltd notice of any defect with the product within 30 days of the customer becoming aware of the defect.
4. Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. Typical battery replacement period is 3-4 years. Long term exposure to high temperatures will shorten the battery life. Batteries used or stored in a manner inconsistent with the manufacturer's specifications and instructions shall not be covered by this warranty.
5. No modifications to the original specifications determined by Sealite shall be made without written approval of Sealite Pty Ltd.
6. Sealite lights can be fitted with 3rd party power supplies and accessories but are covered by the 3rd party warranty terms and conditions.
7. The product must be packed and returned to Sealite Pty Ltd by the customer at his or her sole expense. Sealite Pty Ltd will pay return freight of its choice. A returned product must be accompanied by a written description of the defect and a photocopy of the original purchase receipt. This receipt must clearly list model and serial number, the date of purchase, the name and address of the purchaser and authorised dealer and the price paid by the purchaser. On receipt of the product, Sealite Pty Ltd will assess the product and advise the customer as to whether the claimed defect is covered by this warranty.
8. Sealite Pty Ltd reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person.
9. Input voltage shall not exceed those recommended for the product.
10. Warranty does not cover damage caused by the incorrect replacement of battery in solar lantern models.
11. This warranty does not cover any damage or defect caused to any product as a result of water flooding or any other acts of nature.
12. There are no representations or warranties of any kind by Sealite or any other person who is an agent, employee, or other representative or affiliate of Sealite, express or implied, with respect to condition of performance of any product, their merchantability, or fitness for a particular purpose, or with respect to any other matter relating to any products.

Limitation of Liability

To the extent permitted by section 68A of the Trade Practices Act 1974 (Cth), the liability of Sealite Pty Ltd under this Warranty will be, at the option of Sealite Pty Ltd, limited to either the replacement or repair of any defective product covered by this Warranty. Sealite will not be liable to Buyer for consequential damages resulting from any defect or deficiencies.

Limited to Original Purchaser

This Warranty is for the sole benefit of the original purchaser of the covered product and shall not extend to any subsequent purchaser of the product.

Miscellaneous

Apart from the specific warranties provided under this warranty, all other express or implied warranties relating to the above product is hereby excluded to the fullest extent allowable under law. The warranty does not extend to any lost profits, loss of good will or any indirect, incidental or consequential costs or damages or losses incurred by the purchaser as a result of any defect with the covered product.

Warrantor

Sealite Pty Ltd has authorised distribution in many countries of the world. In each country, the authorised importing distributor has accepted the responsibility for warranty of products sold by distributor. Warranty service should normally be obtained from the importing distributor from whom you purchased your product. In the event of service required beyond the capability of the importer, Sealite Pty Ltd will fulfil the conditions of the warranty. Such product must be returned at the owner's expense to the Sealite Pty Ltd factory, together with a photocopy of the bill of sale for that product, a detailed description of the problem, and any information necessary for return shipment.

Other Sealite Products Available



**Marine Lanterns
(1-12nm+)**



**Monitoring
& Control Systems**



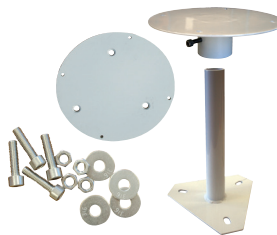
Bridge & Barge Lights



**Marine Buoys
(up to 3mt in diameter)**



Area Lighting



**Mooring Systems
& Accessories**



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